

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

File : PLUSPAT

SS Results

1	8	(1) ..FAM US6217272/PN
2	106	..CITB US6217272/PN
3	65	BATCH AND PALLET
4	0	2 AND 3
5	3	SS2 AND TRANSPORT?

US4911597; US4951601; US4962441; US5000113; US5013385; US5046909; US5102495  
 US5215619; US5224809; US5227708; US5280983; US5292393; US5308431; US5315473  
 US5345999; US5354715; US5355066; US5360996; US5362526; US5363872; US5371042  
 US5391035; US5399387; US5427666; US5443995; US5447409; US5460689; US5469035  
 US5521120; US5534231; US5538390; US5556147; US5556248; US5563798; US5566744  
 US5579718; US5607009; US5607776; US5630690; US5630916; US5630917; US5636964  
 US5656902; US5658442; US5661913; US5674786; US5678980; US5697427; US5697750  
 US5740062; US5746460; US5746897; US5747360; US5764012; US5780357; US5784238  
 US5788799; US5789878; US5795355; US5799860; US5803977; US5810937; US5822171  
 US5833426; US5838121; US5844195; US5846883; US5851602; US5855681; US5861086  
 US5871588; US5871811; US5877086; US5879127; US5882165; GB2171119; JP63-02463  
 JP05339723

"Automatic System for Single Wafer Reactive Ion Etching," IBM Technical Disclosure Bul  
 2, Jul. 1990, pp.239-242.

- STG** - (B1) U.S. Patent (no pre-grant pub.) after jan. 2, 2001
- AB** - An apparatus for simultaneously transporting and processing substrates is described. The ap  
 load lock that stores at least one substrate prior to processing and that stores at least one sub  
 processing. A first transport mechanism transports at least one substrate into and out of the  
 stage elevator is adapted to receive the first transport mechanism. A first process chamber is  
 disposed from the multi-stage elevator. The multi-stage elevator vertically transports at leas  
 and out of the first process chamber. A second process chamber may be coupled to the mult  
 second transport mechanism transports at least one substrate between the multi-stage elevat  
 process chamber.
- UP** - 2001-19

---

7 / 8 PLUSPAT - ©QUESTEL-ORBIT - image

- PN** - WO200018980 A1 20000406 [WO200018980]
- PN2** - WO200018980 A8 20000914 [WO200018980]
- PN3** - WO200018980 A9 20001102 [WO200018980]
- TI** - (A1) AN IN-LINE SPUTTER DEPOSITION SYSTEM
- OTI** - (A1) SYSTÈME DE PULVERISATION CATHODIQUE EN LIGNE
- LA** - ENGLISH (ENG)
- PA** - (A1) APPLIED SCIENCE & TECH INC (US)
- PA0** - APPLIED SCIENCE AND TECHNOLOGY, INC. ; 35 Cabot Road Woburn, MA 01801 (U
- PA2** - (A8) APPLIED SCIENCE & TECH INC (US)
- PA3** - (A9) APPLIED SCIENCE & TECH INC (US)
- IN** - (A1) FELSENTAL DAVID; LEE CHUNGHSIN; SFERLAZZO PIERO
- AP** - WO/99/22888 19991001 [1999WO-US22888]
- PR** - US10261098P 19981001 [1998US-P102610]  
 US11672199P 19990121 [1999US-P116721]  
 US40451699 19990923 [1999US-0404516]
- IC** - (A1) C23C-014/56 H01J-037/34 H01L-021/00
- EC** - C23C-014/56D2  
 C23C-014/56F
- DS** - JP; European Patent (AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NI

- DT** - Basic
- CT** - Cited in the search report  
 US4747928(A)(Cat. Y);US5661913(A)(Cat. Y);US4405435(A)(Cat. A);GB2171119(A)(Cat. A)  
 PATENT ABSTRACTS OF JAPAN vol. 015, no. 275 (C-0849), 12 July 1991 (1991-07-12)  
 A (KOKUSAI ELECTRIC CO LTD), 18 April 1991 (1991-04-18)(Cat. X)  
 "AUTOMATIC SYSTEM FOR SINGLE WAFER REACTIVE ION ETCHING" IBM TEC  
 DISCLOSURE BULLETIN,US,IBM CORP. NEW YORK, vol. 33, no. 2, page 239-242 XI  
 0018-8689(Cat. Y)  
 PATENT ABSTRACTS OF JAPAN vol. 018, no. 185 (C-1185), 30 March 1994 (1994-03-30)  
 339723 A (NEC CORP), 21 December 1993 (1993-12-21)(Cat. Y)  
 PATENT ABSTRACTS OF JAPAN vol. 012, no. 232 (E-628), 30 June 1988 (1988-06-30)  
 (MATSUSHITA ELECTRIC IND CO LTD), 2 February 1988 (1988-02-02)(Cat. A)
- STG** - (A1) Publ. Of int. Appl. With int. Search rep
- STG2** - (A8) Modified first page
- STG3** - (A9) Complete corrected document
- AB** - An apparatus for simultaneously transporting and processing substrates is described. The apparatus includes a load lock (18) that stores at least one substrate prior to processing and that stores at least one substrate during processing. A first transport mechanism (40) transports at least one substrate into and out of a multi-stage elevator (24) is adapted to receive the first transport mechanism. A first process chamber (42) is vertically disposed from the multi-stage elevator. The multi-stage elevator vertically transports at least one substrate into and out of the first process chamber. A second process chamber (44) may be disposed below the first process chamber. A second transport mechanism (44) transports at least one substrate between the multi-stage elevator and the second process chamber.
- UP** - 2000-13

---

8 / 8 PLUSPAT - ©QUESTEL-ORBIT - image

- PN** - WO200018979 A1 20000406 [WO200018979]
- PN2** - WO200018979 A8 20000817 [WO200018979]
- TI** - (A1) SPUTTER DEPOSITION APPARATUS
- OTI** - (A1) DISPOSITIF DE PULVERISATION CATHODIQUE
- LA** - ENGLISH (ENG)
- PA** - (A1) APPLIED SCIENCE & TECH INC (US)
- PA0** - APPLIED SCIENCE AND TECHNOLOGY, INC. ; 35 Cabot Road Woburn, MA 01801 (US)
- PA2** - (A8) APPLIED SCIENCE & TECH INC (US)
- IN** - (A1) LEE CHUNGHSIN; SFERLAZZO PIERO; FELSENTAL DAVID
- AP** - WOUS9922887 19991001 [1999WO-US22887]
- PR** - US10261098P 19981001 [1998US-P102610]  
 US11672199P 19990121 [1999US-P116721]  
 US40175499 19990923 [1999US-0401754]
- IC** - (A1) C23C-014/02 C23C-014/34 H01L-037/34
- EC** -  
 C23C-014/02D  
 C23C-014/34B  
 C23C-014/35  
 C23C-014/35D  
 C23C-014/56F

## 5 / 8 PLUSPAT - ©QUESTEL-ORBIT

**PN** - EP1117850 A1 20010725 [EP1117850]  
**TI** - (A1) SPUTTER DEPOSITION APPARATUS  
**OTI** - (A1) VORRICHTUNG ZUM BESCHICHTEN DURCH KATHODENZERSTÄUBUNG  
 (A1) DISPOSITIF DE PULVERISATION CATHODIQUE  
**LA** - ENGLISH (ENG)  
**PA** - (A1) APPLIED SCIENCE & TECHNOLOGY I (US)  
**IN** - (A1) LEE CHUNGHSIN (US); SFERLAZZO PIERO (US); FELSENTAL DAVID (US)  
**AP** - EP99969749 19991001 [1999EP-0969749]  
**PR** - WOUS9922887 19991001 [1999WO-US22887]  
 US10261098P 19981001 [1998US-P102610]  
 US11672199P 19990121 [1999US-P116721]  
 US40175499 19990923 [1999US-0401754]  
**IC** - (A1) C23C-014/02 C23C-014/34 H01J-037/34  
**DS** - AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE  
**CT** - Cited in the search report  
 See references of WO 0018979A1  
**STG** - (A1) Public. Of applic. With search report  
**UP** - 2001-30

## 6 / 8 PLUSPAT - ©QUESTEL-ORBIT

**PN** - US6217272 B1 20010417 [US6217272]  
**TI** - (B1) In-line sputter deposition system  
**PA** - (B1) APPLIED SCIENCE & TECH INC (US)  
**PA0** - Applied Science and Technology, Inc., Wilmington MA [US]  
**IN** - (B1) LEE CHUNGHSIN (US); SFERLAZZO PIERO (US); FELSENTAL DAVID (US)  
**AP** - US40451699 19990923 [1999US-0404516]  
**FD** - Rel. Prov. 60/102,610 19981001 [1998US-P102610]  
 Rel. Prov. 60/116,721 19990121 [1999US-P116721]  
**PR** - US40451699 19990923 [1999US-0404516]  
 US11672199P 19990121 [1999US-P116721]  
 US10261098P 19981001 [1998US-P102610]  
**IC** - (B1) B65G-049/07  
**EC** - C23C-014/02D  
 C23C-014/34B  
 C23C-014/35  
 C23C-014/35D  
 C23C-014/56D2  
 C23C-014/56F  
 H01J-037/34M2  
**PCL** - ORIGINAL (O) : 414217000; CROSS-REFERENCE (X) : 414935000 414939000 414941000  
**DT** - Corresponding document  
**CT** - US3902615; US3972424; US4008815; US4405435; US4437961; US4534695; US4558984  
 US4668365; US4715921; US4747928; US4785962; US4819167; US4842683; US4872947

Set	Items	Description
S1	5187174	BATCH???? OR BUNCH? OR GROUP? OR ARRAY? ?
S2	48260	PALLET? ?
S3	10058784	TRANSPORT? OR TRANSFER? OR CONVEY???? OR CARR???? OR TRANS- MIT?
S4	560791	ALIGN?
S5	6864780	POSITION? ? OR LOCATION? ? OR SPOT? ? OR POINT?
S6	10666015	PROCESS?????
S7	2975099	SUBSTRATE? ? OR IC OR WAFER? OR INTEGRATED()CIRCUIT?
S8	1032790	CHAMBER? ?
S9	160629	S6(6N)S7
S10	7	S1 AND S2 AND S9
S11	5	RD (unique items)
S12	1971	S3 AND S1 AND S7 AND S4
S13	138	S3(6N)S1(6N)S7(6N)S4
S14	53	S3(3N)S1(3N)S7(3N)S4
S15	0	S14 AND S8
S16	49	S12 AND S8
S17	3	S13 AND S8
S18	3	RD (unique items)
S19	3	S18 NOT S11
S20	0	S14 AND S2
S21	53	S14 NOT (S19 OR S11)
S22	39	RD (unique items)
S23	0	S22 AND PD<=20000727
S24	27	S22 AND PY<=2000

? show files

File 315:ChemEng & Biotec Abs 1970-2003/May  
(c) 2003 DECHEMA

File 2:INSPEC 1969-2003/May W4  
(c) 2003 Institution of Electrical Engineers

File 6:NTIS 1964-2003/Jun W1  
(c) 2003 NTIS, Intl Cpyrght All Rights Res

File 8:Ei Compendex(R) 1970-2003/May W4  
(c) 2003 Elsevier Eng. Info. Inc.

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec  
(c) 1998 Inst for Sci Info

File 34:SciSearch(R) Cited Ref Sci 1990-2003/Jun W1  
(c) 2003 Inst for Sci Info

File 99:Wilson Appl. Sci & Tech Abs 1983-2003/Apr  
(c) 2003 The HW Wilson Co.

File 94:JICST-EPlus 1985-2003/Jun W1  
(c)2003 Japan Science and Tech Corp(JST)

File 65:Inside Conferences 1993-2003/Jun W1  
(c) 2003 BLDSC all rts. reserv.

File 35:Dissertation Abs Online 1861-2003/May  
(c) 2003 ProQuest Info&Learning

File 144:Pascal 1973-2003/May W4  
(c) 2003 INIST/CNRS

File 347:JAPIO Oct 1976-2003/Feb(Updated 030603)  
(c) 2003 JPO & JAPIO

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200335  
(c) 2003 Thomson Derwent

?

11/9/2 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2003 JPO & JAPIO. All rts. reserv.

05204170 \*\*Image available\*\*  
METHOD AND EQUIPMENT FOR MANUFACTURING SUBSTRATE OF TILE

PUB. NO.: 08-159670 [JP 8159670 A]  
PUBLISHED: June 21, 1996 (19960621)  
INVENTOR(s): KUDO TAKENOBU  
APPLICANT(s): TAKAHAMA KOGYO KK [326618] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 06-331513 [JP 94331513]  
FILED: December 08, 1994 (19941208)  
INTL CLASS: [6] F27D-003/12; C04B-033/30  
JAPIO CLASS: 24.2 (CHEMICAL ENGINEERING -- Heating & Cooling); 13.3 (INORGANIC CHEMISTRY -- Ceramics Industry); 27.2 (CONSTRUCTION -- Building)

#### ABSTRACT

PURPOSE: To dry a plurality of kinds of tile substrate groups set mixedly on a pallet and to simplify a manufacturing process by a method wherein the tile substrate groups are set from molding lines onto the pallet driven intermittently, according to each kind and in each line, and conveyed into a drying furnace and the tile substrate groups after dried are distributed to subsequent processes for each kind.

CONSTITUTION: A plurality of kinds of tile substrate group are set from molding lines 10 onto a pallet 12 driven intermittently, according to each kind and in each line. More concretely, a loading mechanism sucks a tile substrate by using a sucking unit and set it on the pallet 12. Next, the tile substrate groups are conveyed, together with the pallet 12, into a drying furnace 22 by a drying carriage 24 and dried therein. An unloading mechanism 28 discriminates and holds dried tile substrates set on the pallet 12 on the drying carriage 24, according to each kind and for each line thereof, and unloads them onto a subsequent distribution control mechanism 30. A holding means 32 holds the tile substrates in one line and then transfers them onto the distribution control mechanism 30 located nearby.

11/9/3 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2003 Thomson Derwent. All rts. reserv.

014572316 \*\*Image available\*\*  
WPI Acc No: 2002-393020/200242  
Related WPI Acc No: 2002-414392; 2002-414442  
XRPX Acc No: N02-308118

Substrate processing method for microelectronic device fabrication, involves performing cleaning operation of batch of substrates after alignment rods of substrate processing pallet and cleaning chamber are engaged

Patent Assignee: FELSENTHAL D (FELS-I); KLEIN M P (KLEI-I); SFERLAZZO P (SFER-I)

Inventor: FELSENTHAL D; KLEIN M P; SFERLAZZO P  
Number of Countries: 001 Number of Patents: 001  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
-----------	------	------	-------------	------	------	------

US 20020034883 A1 20020321 US 2000221030 P 20000727 200242 B  
US 2001917224 A 20010727

Priority Applications (No Type Date): US 2000221030 P 20000727; US  
2001917224 A 20010727

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020034883	A1		26	H01L-021/31	Provisional application US 2000221030

Abstract (Basic): US 20020034883 A1

NOVELTY - A **batch** of **substrates** on a **substrate processing pallet** (114) are transported to a cleaning chamber (103) by a transport mechanism. The cleaning operation of the substrates are performed after positioning the **pallet** with respect to the chamber by engaging the alignment rods of the **pallet** with that of the cleaning chamber.

USE - Used for microelectronic and electro-optic device fabrication.

ADVANTAGE - Reduces processing errors due to the accumulation of both translational and rotational substrate positioning error. Accommodates substrate of varying sizes and simplifies the handling of substrate **batches**.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the in-line **substrate processing** machine.

Cleaning chamber (103)

**Substrate processing pallet** (114)

pp; 26 DwgNo 1/11

Title Terms: SUBSTRATE; PROCESS; METHOD; MICROELECTRONIC; DEVICE; FABRICATE  
; PERFORMANCE; CLEAN; OPERATE; **BATCH** ; SUBSTRATE; AFTER; ALIGN; ROD;  
SUBSTRATE; PROCESS; **PALLET** ; CLEAN; CHAMBER; ENGAGE

Derwent Class: U11

International Patent Class (Main): H01L-021/31

International Patent Class (Additional): H01L-021/469

File Segment: EPI

Manual Codes (EPI/S-X): U11-C06A1B



19/9/1 (Item 1 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
(c) 2003 Thomson Derwent. All rts. reserv.

014715278  
WPI Acc No: 2002-535982/200257  
Related WPI Acc No: 2003-147580  
XRAM Acc No: C02-151923  
XRPX Acc No: N02-424362

Apparatus for testing samples with multiple biopolymer arrays, has cover assembled to substrate carrying multiple arrays forming several chambers, introducing samples into chambers that contacted arrays

Patent Assignee: AGILENT TECHNOLOGIES INC (AGIL-N)  
Inventor: AMORESE D A; DAHM S C; SCHEMBRI C T; SCHLEIFER A  
Number of Countries: 001 Number of Patents: 001  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6399394	B1	20020604	US 99343645	A	19990630	200257 B

Priority Applications (No Type Date): US 99343645 A 19990630

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6399394	B1	23	G01N-001/10		

Abstract (Basic): US 6399394 B1

NOVELTY - An apparatus for testing samples with multiple biopolymer arrays comprises a cover assembled to contiguous substrate carrying multiple arrays each with regions of biopolymers linked to substrate on the first side, the cover and substrate together form several **chambers** each containing a biopolymer array accessible through its own port. Samples are introduced into **chambers** through a port and the fluid samples contact respective arrays.

DETAILED DESCRIPTION - An apparatus (I) for testing multiple fluid samples with multiple biopolymer array comprises a cover defining multiple cavities on a first side and with respective ports communicating with the cavities, the ports including respective resilient self-sealing portions normally closing the ports, which is assembled to a one-piece planar substrate carrying on a first side, multiple arrays each with multiple regions of biopolymers linked to the substrate, as a result the cover and the substrate together form several **chambers** each containing a biopolymer array, where the cover has a first and a second set of ports so that each **chamber** is accessible through a first and second port so that fluid samples are introduced into respective **chambers** through respective first ports while venting through respective second ports. Alternatively, (I) comprises a cover including a resilient gasket with multiple openings and port portions, and a cover member where the gasket and cover member are dimensioned so that the cover was assembled to a contiguous planar substrate **carrying** on a first side multiple arrays each with multiple regions of biopolymers linked to the **substrate**, with the gasket sandwiched between the **substrate** and cover member and with the gasket opening **aligned** with respective **arrays**, so that the cover and the **substrate** together form several **chambers** each containing a biopolymer **array** and each accessible through a port which includes the gasket port portions normally closing the port upon penetration of a conduit through respective port portions of the resilient gasket.

USE - (I) is useful for testing multiple fluid samples with multiple biopolymer arrays to detect a binding pattern between the multiple fluid samples and the arrays, which involves assembling a

cover to a one-piece substrate carrying multiple arrays each with multiple regions of biopolymers linked to the substrate on a first side, so that the cover and the substrate together form several **chambers** each containing a biopolymer array and each being accessible through its own port which includes a resilient self-sealing portion, introducing the multiple fluid samples into respective **chambers** through a port of each such that the fluid samples contact respective arrays, and observing a binding pattern on the arrays. The method additionally involves inserting a first set of conduits through the resilient members of respective first ports and inserting a second set of conduits through the self-sealing portion of respective second ports, and where the multiple fluid samples are introduced into each **chamber** through the first set of conduits while venting occurs through the second set of conduits. The cover is assembled to a contiguous substrate carrying multiple arrays on a first side each with multiple regions of biopolymers linked to the **substrate** (with the gasket sandwiched between the **substrate** and cover member and the gasket openings aligned with respective **arrays**), so that the cover and the **substrate** together form a number of **chambers** each containing a biopolymer **array** and being accessible through its own port, introducing multiple fluid samples respective **chambers** through a port of each such that the fluid samples contact respective arrays, or penetrating gasket port portion with at least one conduit and introducing fluid samples into respective **chambers** through a conduit and **chamber** ports such that the fluid sample contact respective arrays, and observing the binding pattern of the array.

ADVANTAGE - (I) has the ability to allow samples to be positively loaded into or withdrawn from the **chamber** while avoiding sample leakage. (I) has tolerance for increased temperature without adversely affecting the sample, is of relatively simple constructions, is easy to clean and preferably with any components subject to wear being readily replaceable, and has the ability to avoid multiple undetected errors.

pp; 23 DwgNo 0/16

#### Technology Focus:

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Apparatus: (I) additionally comprises the planar substrate attached to the cover. The gasket is dimensioned such that, following assembly, a first side of the gasket faces the substrate and a second side of the gasket faces the cover member, and the port portions are positioned transversely beyond the substrate and the ports further comprise respective fluid ducts in the cover member which, following assembly, communicate between respective **chambers** and respective port portions of the gasket such that the **chambers** are accessed by conduits which have penetrated from the first side of the gasket through the port portions to the ducts. (I) additionally comprises a coupler to extend between the assembled cover and substrate to urge the cover toward the substrate and retain them in the assembled position, the coupler including a first member positionable adjacent a second side of the substrate and an adjustable interconnect member extendable between the first member and the substrate. The first member comprises a plate having guide openings alignable with respective port portions of the gasket. The plate has at least one view opening through which the arrays are observed when the plate faces a second side of the substrate with the coupler retaining the cover and substrate in the assembled position.

#### Extension Abstract:

WIDER DISCLOSURE - A kit for testing multiple fluid sample comprising a contiguous substrate carrying multiple arrays each with multiple regions of biopolymers linked to the substrate, and a reference sample for exposure to at least one of the arrays are

disclosed.

EXAMPLE - No suitable example given.

Title Terms: APPARATUS; TEST; SAMPLE; MULTIPLE; ARRAY; COVER; ASSEMBLE;  
SUBSTRATE; CARRY; MULTIPLE; ARRAY; FORMING; **CHAMBER** ; INTRODUCING;  
SAMPLE; **CHAMBER** ; CONTACT; ARRAY

Derwent Class: B04; D16; S03

International Patent Class (Main): G01N-001/10

International Patent Class (Additional): B01L-003/00; C12M-001/22;

G01N-021/76; G01N-033/48

File Segment: CPI; EPI

Manual Codes (CPI/A-N): B04-C03; B11-C08E6; B12-K04E; D05-H09

Manual Codes (EPI/S-X): S03-E13B2; S03-E14H

Chemical Fragment Codes (M6):

\*01\* M905 P831 Q233 R502 R515 R521 R522 R614 R627 R639

19/9/2 (Item 2 from file: 350)

DIALOG(R) File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

010895044 \*\*Image available\*\*

WPI Acc No: 1996-391995/199639

XRPX Acc No: N96-330361

Door drive mechanisms for batch loading semiconductor wafers into load  
lock from portable substrate carrier - has mechanism which move carrier  
and load lock door between sealed closed and open positions, and parks  
doors as unit to position remote from region between carrier and load  
lock chamber

Patent Assignee: BROOKS AUTOMATION INC (BROO-N)

Inventor: DREW M A; MUKA R S; PIPPINS M W

Number of Countries: 073 Number of Patents: 011

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
TW 278200	A	19960611	TW 95109347	A	19950907	199639 B
WO 9702199	A1	19970123	WO 96US11244	A	19960702	199710
US 5607276	A	19970304	US 95498859	A	19950706	199715
US 5609459	A	19970311	US 95498597	A	19950706	199716
US 5613821	A	19970325	US 95499069	A	19950706	199718
AU 9664089	A	19970205	AU 9664089	A	19960702	199721
US 5664925	A	19970909	US 95498987	A	19950706	199742
			US 97789510	A	19970127	
EP 886617	A1	19981230	EP 96923623	A	19960702	199905
			WO 96US11244	A	19960702	
CN 1195332	A	19981007	CN 96196791	A	19960702	199908
JP 11513006	W	19991109	WO 96US11244	A	19960702	200004
			JP 97505291	A	19960702	
KR 99028767	A	19990415	WO 96US11244	A	19960702	200027
			KR 98700066	A	19980106	

Priority Applications (No Type Date): US 95499069 A 19950706; US 95498597 A  
19950706; US 95498859 A 19950706; US 95498987 A 19950706; US 97789510 A  
19970127

Cited Patents: JP 4061146; JP 4206547; US 4550242; US 5431600

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

TW 278200 A 18 H01L-021/00

JP 11513006 W 93 B65G-049/00 Based on patent WO 9702199

KR 99028767 A B65G-049/07 Based on patent WO 9702199

WO 9702199 A1 E 76 B65G-049/07

Designated States (National): AL AM AT AU AZ BB BG BR BY CA CH CN CZ DE  
DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LK LR LS LT LU LV MD MG MK

INVENTOR(s): TOKUNAGA KENICHI  
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 08-226294 [JP 96226294]  
FILED: August 28, 1996 (19960828)  
INTL CLASS: [6] G03F-001/16; G03F-007/20; H01L-021/027  
JAPIO CLASS: 29.1 (PRECISION INSTRUMENTS -- Photography & Cinematography);  
42.2 (ELECTRONICS -- Solid State Components)  
JAPIO KEYWORD: R003 (ELECTRON BEAM); R098 (ELECTRONIC MATERIALS -- Charge  
Transfer Elements, CCD & BBD)

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide an electron mask, an aligner using the electron mask and the aligning method capable of improving the positional accuracy of a pattern in a memory cell area and a array area.

SOLUTION: As for the electron beam mask equipped with a variable formation aperture 107 for forming the electron beam 111 to a desired shape and a plurality of pattern groups of transferring apertures 108, position detection marks for recognizing respective positions of the apertures 107 and the apertures 108 groups are separately formed near the aperture 107 and a plurality of group of the transferring apertures 108, and each position detecting mark is detected and the position of the mark is recognized by an optical system 103 installed above an electron beam mask stage, then, the mask is provided with a function of respective correcting the relative transfer position of the variable formation aperture 107 and the plurality of transferring apertures 108 groups on a substrate to be aligned 110.

24/9/12 (Item 5 from file: 347)  
DIALOG(R) File 347: JAPIO  
(c) 2003 JPO & JAPIO. All rts. reserv.

03929435 \*\*Image available\*\*  
METHOD AND DEVICE FOR TRANSFERRING WAFER OF SURFACE TREATMENT DEVICE

PUB. NO.: 04-294535 [JP 4294535 A]  
PUBLISHED: October 19, 1992 ( 19921019)  
INVENTOR(s): KODAMA SHUNSAKU  
SHIMA YASUMASA  
OBARA SHIGERU  
OHASHI YASUHIKO  
APPLICANT(s): DAINIPPON SCREEN MFG CO LTD [351872] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 03-083558 [JP 9183558]  
FILED: March 22, 1991 (19910322)  
INTL CLASS: [5] H01L-021/304; H01L-021/027; H01L-021/306  
JAPIO CLASS: 42.2 (ELECTRONICS -- Solid State Components)  
JOURNAL: Section: E, Section No. 1329, Vol. 17, No. 110, Pg. 99, March 08, 1993 (19930308)

#### ABSTRACT

PURPOSE: To enable non-uniformity of surface treatment of wafers to be eliminated by reducing a total amount of required surface treatment liquid or surface treatment steam by reducing an installation area of a volume and an entire device of a treatment bath.

CONSTITUTION: Two wafer carriers 1.1 are placed on a carrier-placing stand 2 while they are placed side by side in wafer-alignment direction, two wafer-retaining tools 6.6 are provided so that it can be elevated

relatively in reference to the carrier-placing stand, and then wafers W within each wafer carrier 1.1 are pushed up and retained relatively by two wafer retaining tools 6.6. Two wafer-retaining tools 6.6 are provided freely so that they are separated in wafer - alignment direction and then the wafers W which are separated into a front group W(sub 1) and a back group W(sub 2) are aligned in equal pitches. The wafers W of two wafer carriers are held collectively by a wafer chuck 15 and then are dipped into a treatment bath 20. The wafers W are not divided into the front and rear groups within the treatment bath 20, thus forming a uniform rising flow of treatment liquid.

24/9/13 (Item 6 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2003 JPO & JAPIO. All rts. reserv.

02658300 \*\*Image available\*\*  
METHOD OF POSITIONING FOR MULTI-TERMINAL COMPONENT

PUB. NO.: 63-275200 [JP 63275200 A]  
PUBLISHED: November 11, 1988 ( 19881111)  
INVENTOR(s): IKEDA HIROSHI  
APPLICANT(s): FUJITSU LTD [000522] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 62-112050 [JP 87112050]  
FILED: May 07, 1987 (19870507)  
INTL CLASS: [4] H05K-013/04; B23P-021/00; G01B-011/00; G05D-003/12;  
G06F-015/62  
JAPIO CLASS: 42.1 (ELECTRONICS -- Electronic Components); 22.3 (MACHINERY  
-- Control & Regulation); 25.2 (MACHINE TOOLS -- Cutting &  
Grinding); 45.4 (INFORMATION PROCESSING -- Computer  
Applications); 46.1 (INSTRUMENTATION -- Measurement)  
JOURNAL: Section: E, Section No. 725, Vol. 13, No. 103, Pg. 69, March  
10, 1989 (19890310)

#### ABSTRACT

PURPOSE: To make an very accurate position alignment much faster by a method wherein two optical shutters are provided at an optical section to detect a reflected light from a printed substrate and a PGA, and a fast Fourier transformation section is provided in an image processing device.

CONSTITUTION: An optical section 3 is transferred between a printed substrate 2 and a pin grid array (PGA) 1 after a rough position alignment, an optical shutter 3-10 is opened so as to send an image to an image processing device 4. The image data is converted into an digital data so as to form a data in time sequence which is sent to a fast Fourier transformation (FFT transformation) board 4-3 to be converted into a frequency data. Next, the frequency data is multiplied by a frequency data previously set of a standard printed substrate and then sent to the FFT transformation board again, and a reverse FFT transformation is performed to produce a position data for detecting a pattern position of a printed substrate 2. By these processes, an operational processing is performed in a fast Fourier transformation board without transferring the optical section 3, and thus a highly accurate position alignment high in processing speed can be accomplished.

24/9/14 (Item 7 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2003 JPO & JAPIO. All rts. reserv.

direction parallel to side of substrates contg. injection port or inclined toward latter

Patent Assignee: CANON KK (CANO )

Inventor: IWAYAMA M; TSUBOYAMA A

Number of Countries: 016 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 526094	A2	19930203	EP 92306718	A	19920723	199305 B
JP 5027211	A	19930205	JP 91206187	A	19910724	199313
EP 526094	A3	19930811	EP 92306718	A	19920723	199507

Priority Applications (No Type Date): JP 91206187 A 19910724

Cited Patents: No-SR.Pub; 4.Jnl.Ref; EP 312028; EP 424944; GB 2230105; JP 1214825; JP 62018522; JP 62247326; JP 62247327; JP 63081324; US 4778259

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

EP 526094 A2 E 10 G02F-001/137

Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL PT SE

JP 5027211 A G02F-001/13

EP 526094 A3 G02F-001/137

Abstract (Basic): EP 526094 A

A liq. crystal device comprises a cell defined between a pair of substrates at one side of which is an injection part through which a chiral smectic liq. is introduced. The **substrates carry arrays** of scanning electrodes and data electrodes, and have their **alignment** axes in identical directions to provide a pretilt of the liq. crystal molecules in the vicinity of the substrates so that the former raise their leading ends in a direction which is an axis parallel to the side of the substrates contg. the injection port or directed toward the latter. The alignment axes are provided by rubbing or by oblique vapour deposition.

ADVANTAGE - Void formation and liq. crystal thickening are retarded giving extended life.

Dwg.0/1

Title Terms: LONG; LIFE; LC; DEVICE; LEADING; END; CRYSTAL; MOLECULAR; RAISE; DIRECTION; PARALLEL; SIDE; SUBSTRATE; CONTAIN; INJECTION; PORT; INCLINE; LATTER

Derwent Class: L03; P81; U14; V07

International Patent Class (Main): G02F-001/13; G02F-001/1337; G02F-001/137

International Patent Class (Additional): G02F-001/1341

File Segment: CPI; EPI; EngPI

Manual Codes (CPI/A-N): L03-G05B

Manual Codes (EPI/S-X): U14-K01A1A; U14-K01A1G; U14-K01A1J; V07-K01A

24/9/26 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

009267470 \*\*Image available\*\*

WPI Acc No: 1992-394882/ 199248

XRAM Acc No: C93-176149

XRPX Acc No: N93-305808

**Wafer transfer from carriers to surface treatment appts. - by water group alignment and shifting to obtain uniform spacing**

Patent Assignee: DAINIPPON SCREEN SEIZO KK (DNIS ); DAINIPPON SCREEN MFG CO LTD (DNIS )

Inventor: KODAMA S; KOHARA S; OHASHI Y; SHIMA Y

Number of Countries: 003 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 4294535	A	19921019	JP 9183558	A	19910322	199248 B
US 5269643	A	19931214	US 92856099	A	19920323	199350
KR 9608905	B1	19960705	KR 924656	A	19920320	199921

Priority Applications (No Type Date): JP 9183558 A 19910322

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 4294535	A		6	H01L-021/304	
US 5269643	A		35	B65G-049/07	
KR 9608905	B1			H01L-021/324	

Abstract (Basic): US 5269643 A

A method of holding and conveying wafers to a surface treatment processor from transmittable wafer carriers which store wafer groups, by using a wafer conveyor, involves (a) aligning the wafer groups on a predetermined straight line while maintaining the relative wafer positions within each group so that the wafer carrier axes coincide and the spacing between the groups is greater than the wafer spacing within each group; (b) shifting at least one wafer group until the group spacing equals the wafer spacing; and (c) holding the shifted group(s) using the wafer conveyor.

The alignment step involves holding the wafer carriers by a support so that the group axes are parallel to each other and extracting the wafer groups while maintaining the relative wafer positions after extraction so that the axes of respective groups coincide with each other. Each carrier has a rectangular bottom side with two long sides at right angles to the wafer faces and with an opening exposing the wafer bottom edges; an opposite open side for wafer group passage; and two parallel holding sides with wafer holding grooves spaced at the wafer spacing of the group, the number of grooves being equal to the number of wafers in the group.

USE/ADVANTAGE - Used for transferring laminate-like wafers such as semiconductor substrates to a carrier-less type surface treatment appts., e.g. for wet etching, film removal, developing or cleaning or for vapour treatment. It transfers wafers at uniform spacing to achieve collective and uniform surface treatment, so that the requisite amt. of surface treatment soln. can be reduced. (First major country equivalent to J04294535-A)

Dwg.6/20

Title Terms: WAFER; TRANSFER; CARRY; SURFACE; TREAT; APPARATUS; WAFER; GROUP; ALIGN; SHIFT; OBTAIN; UNIFORM; SPACE

Derwent Class: L03; Q35; U11

International Patent Class (Main): B65G-049/07; H01L-021/304; H01L-021/324

International Patent Class (Additional): H01L-021/027; H01L-021/306

File Segment: CPI; EPI; EngPI

Manual Codes (CPI/A-N): L04-C

Manual Codes (EPI/S-X): U11-C04A1; U11-C04B; U11-F02A1

24/9/27 (Item 11 from file: 350)

DIALOG(R) File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

002057996

WPI Acc No: 1978-71057A/ 197840

Lignocellulose board mfg. appts. - has aligning device formed by vertical spaced places reciprocated in opposite directions and provided with projections engaging wafers

Patent Assignee: BISON-WERKE BAEHRE & GRETEN GMBH (BAHR ); ELMENDORF  
RESEARCH INC (ELME )

Inventor: ETZOLD R; IMPELLIZZE J; VAUGHAN T

Number of Countries: 004 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 2734403	A	19780928				197840 B
FI 7702319	A	19781130				197851
DE 2734403	B	19791206				197950
US 4295557	A	19811020				198145
SU 812159	A	19810310				198150

Priority Applications (No Type Date): US 77778412 A 19770317

Abstract (Basic): DE 2734403 A

The appts. has a **conveyor** on which are deposited bonding agent impregnated **wafers** for making into a **wafer** board. The appts. includes **wafer** transverse **aligning** means formed by an **array** of parallel, spaced, vertically extending plates which are reciprocated in opposite directions and provided at their upper edges with upstanding projections for engaging the wafers and aligning them parallel to the plates.

The projections may be square or triangular etc. The projections are pref. staggered w.r.t. each other on alternate plates and their distance along the edge of an associated plate corresp. to the length of the longest wafer which has to be aligned

Title Terms: LIGNOCELLULOSE; BOARD; MANUFACTURE; APPARATUS; ALIGN; DEVICE; FORMING; VERTICAL; SPACE; PLACE; RECIPROCAL; OPPOSED; DIRECTION; PROJECT; ENGAGE; WAFER

Derwent Class: F09; P73; Q35

International Patent Class (Additional): B29J-005/04; B32B-000/00;  
B65G-047/14

File Segment: CPI; EngPI

Manual Codes (CPI/A-N): F05-A07

?